



Julie
DalSoglio/MO/R8/USEPA/US
08/03/2009 12:50 PM

To Linda Jacobson/R8/USEPA/US@EPA
cc Scott Brown/MO/R8/USEPA/US@EPA, Wendy Thomi
bcc
Subject Fw: Asarco Air Monitoring Strategy

Linda:

the meeting went well with Richard Oppen Friday afternoon and I asked for us to see a copy of the monitoring plan for your review. Please communicate directly with Bob on any comments and cc Wendy and I.

Iver Johnson and Bob Habeck will attend Wednesday morning's construction management meeting to discuss this plan.

Julie DalSoglio
U.S. Environmental Protection Agency
Region 8 Montana Office
10 West 15th Street Suite 3200
Helena, MT 59626
Tel: 406-457-5025
Fax: 406-457-5055
toll free 1-866-457-2690
dalsoglio.julie@epa.gov
202-564-1480

----- Forwarded by Julie DalSoglio/MO/R8/USEPA/US on 08/03/2009 12:48 PM -----



"Habeck, Bob"
<BHabeck@mt.gov>
07/31/2009 03:08 PM

To Julie DalSoglio/MO/R8/USEPA/US@EPA
cc
Subject Asarco Air Monitoring Strategy

A copy of Version #5 for your review and comment.

Bob Habeck
Air Program Manager
Montana Dept. of Environ. Quality
Helena, MT 59620

(406) 444-7305 w
(406) 431-1359 c
(406) 444-1499 f



bhabeck@mt.gov ASARCO 05.doc

Air Monitoring Proposal

ASARCO - East Helena Stack Demolition

Montana Department of Environmental Quality

Air Resources Management Bureau

July 31, 2009

I. ABSTRACT

The Environmental Protection Agency (EPA) is requiring ASARCO to demolish three industrial stacks. This action has prompted the Department of Environmental Quality (DEQ) to establish an ambient air monitoring strategy to measure potential particulate matter (PM) emissions as a result of the demolition event.

II. BACKGROUND

The Air Resources Management Bureau (ARMB) has monitored particulate matter (PM) in East Helena since the 1970's. The sources of PM in East Helena include ASARCO, American Chemet, Ash Grove, re-entrained road dust, residential wood smoke, and fugitive dust. The demolition of the ASARCO stacks has the potential for emitting additional short-term PM emissions from the felling of the stacks.

The Cleveland Wrecking Company, whom has been contracted for the subject stack demolition, has provided for stack demolition dust control measures within a larger demolition action plan. This air monitoring proposal is supplemental to the dust abatement strategy outlined in the demolition action plan.

ARMB is proposing to locate air monitoring equipment positioned at four (4) separate locations surrounding the demolition area. Monitoring sites would be positioned at the eastern (518 Site) and western (Rodeo Site) edges of the ASARCO property boundary. Monitoring sites would also be located along the southern edge of the East Helena city limits (Prickly Pear Site) and at the junction of US 12 and Hwy 518 (A&W Site). All of the proposed monitoring sites are accessible to the general public and thus represent ambient air.

Visible and monitored observations of dust emissions will determine whether subsequent filter analysis would be pursued. Continuous PM monitoring data results (e-BAM) would provide documentation of the PM impact (concentration) and the BGI filters would allow for laboratory elemental analysis.

III. GOALS

The monitoring goals for the demolition event are as follows:

- To document the public's exposure to PM; and
- If necessary, provide elemental analysis of PM from the event.

IV. METEOROLOGY

The ARMB staff meteorologist intends to analyze and document weather conditions and to forecast weather conditions for the demolition day.

Based upon historical wind analysis, dominant winds during the early morning hours when the demolition event is intended to occur would be from the south down the Prickly Pear Creek drainage. Wind drainage flows are usually less than 80 meters deep with predominant westerly winds occurring at the 100 meter elevation. These winds are highly predictable and would only change in response to a synoptic event. In that case, the winds would likely exceed five miles per hour (mph) and, according to the demolition action plan, the demolition would not take place. After the sun has been up for about two hours, this dominant wind flow pattern will break down and the wind conditions are not predictable for more than a day out.

The stacks will be blown from the bottom and the dust cloud will primarily be the consequence of stack impact with the ground. ARMB expects most, if not all, of the dust produced to be entrained into a stable air layer. Dust that escapes the stable air layer may settle out into the surrounding hills or be transported beyond the Helena valley.

Stable air flow from the south will be down-washed by the slag pile likely producing the highest ground level PM concentrations in the vicinity of the Prickly Pear and A&W Sites in the early morning.

V. MONITORING METHODOLOGY

Since actual wind speed and direction will not be known at the time of demolition, ARMB proposes to surround the stack demolition site with monitoring equipment to ensure data capture. The number of samplers required is a function of the wind speed and distance from the stack demolition site.

Given the demolition action plan guidelines limiting wind speed to less than five mph, dust emissions should spread widely and move slowly. Under these meteorological conditions, ARMB proposes to monitor at four locations surrounding the stack demolition site. Figure 1.0 illustrates proposed monitoring site locations.



Figure 1.0 ASARCO East Helena Proposed Monitoring Site Locations

Access to these proposed monitoring site locations is essential to install and recover the samplers. However, access would not be an issue for the operation of the samplers because the samplers are automated and operate unattended. The samplers require a small flat area with sufficient security to ensure they remain stable and operational during the demolition event.

VI. MONITORING EQUIPMENT

Particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) would be the appropriate material to sample. Larger diameter material would settle quickly and it would be unlikely for larger material to leave the demolition site. Four BGI-PQ200 samplers would be positioned prior to the event and programmed to operate from 5:00 a.m. through 5:00 p.m. on the day of the demolition. However, stopping the samplers before 5:00 p.m. would be considered assuming ambient dust levels from the demolition event have subsided.

The sampling schedule should be adequate to ensure capturing the event without operating for an excessive period of time, thereby diluting the sample. The samplers

would collect PM₁₀ on 47 millimeter Teflon filters operating at a flow rate of 1 cubic meter per hour.

ARMB would also exploit the most likely weather conditions by locating a continuous PM₁₀ monitor at the Prickly Pear Site. The e-BAM continuous monitor would be started the day prior to the event and would operate overnight and throughout the event. The e-BAM monitor would be able to report PM₁₀ concentrations based on 30-minute averages of the PM₁₀ for the entire event period and would document the amount of dust actually crossing the highway into East Helena.

VII. DATA HANDLING

Teflon monitoring filters may be assayed quantitatively by x-ray fluorescence for 1-40 elements at a cost of \$30-100 per filter. If x-ray fluorescence is determined to be an appropriate analysis, ARMB recommends, based upon costs, that filters be analyzed for the complete suite of elements, including lead, arsenic, and cadmium.

VIII. CONCLUSION

ARMB will make data results available to interested parties as available.